

# EAST Search History (29pp.)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	(US-20050145900-\$).did.	US-PGPUB	OR	OFF	2006/11/22 10:33
L2	1	(US-20050145900-\$).did. and (photo\$1gate photo adj gate)	US-PGPUB	OR	OFF	2006/11/22 10:44
L3	1	(US-20050145900-\$).did. and (first second pixel)	US-PGPUB	OR	ON	2006/11/22 10:48
L4	1	(US-20050145900-\$).did. and (integration adj (time period interval))	US-PGPUB	OR	ON	2006/11/22 10:48
L5	0	(US-20050145900-\$).did. and ((integration adj (time period interval)) near4 variable (different adj pixel))	US-PGPUB	OR	ON	2006/11/22 10:49
L6	640	((integration adj (time period interval)) near4 variable (different adj pixel)) and cmos	US-PGPUB	OR	ON	2006/11/22 10:49
L7	253	((integration adj (time period interval)) near4 variable (different adj pixel)) and cmos and trnasfer reset and (image adj lag ghost adj image charge adj sweep)	US-PGPUB	OR	ON	2006/11/22 10:50
L8	10	((integration adj (time period interval)) near3 variable (different adj pixel)) and cmos and transfer and reset and (image adj lag ghost adj image charge adj sweep)	US-PGPUB	OR	ON	2006/11/22 10:51
L9	12	((integration adj (time period interval)) near3 variable (different adj pixel)) and cmos and transfer and reset and (image adj lag ghost adj image charge adj sweep)	USPAT	OR	ON	2006/11/22 10:53
L10	0	((integration adj (time period interval)) near3 variable near4 (different adj pixel)) and cmos and transfer and reset and (image adj lag ghost adj image charge adj sweep)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 10:53
L11	1	((integration adj (time period interval)) near3 (different near4 pixel)) and cmos and transfer and reset and (image adj lag ghost adj image charge adj sweep)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 11:07

## EAST Search History

L12	0	wide adj direct adj range and cmos and imager	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 11:42
L13	191	(imager image adj pickup).ti,ab, clm. and "358"/\$7.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 11:43
L14	983	(imager image adj pick\$1up).ti,ab, clm. and "358"/\$7.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 11:43
L15	65	(imager image adj pick\$1up).ti,ab, clm. and "358"/\$7.ccls. and cmos	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 11:44
L16	4	(imager image adj pick\$1up).ti,ab, clm. and "358"/\$7.ccls. and (charge adj sweep ghost adj image image adj lag)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 11:51
L17	11777	("0257428").PN. or ((257/290) or (257/291) or (257/292) or (257/431) or (257/445) or (348/311) or (348/314) or (358/443) or (358/444) or (358/445) or (358/446) or (358/447) or (358/448) or (358/449) or (358/45\$1) or (358/460) or (358/461) or (358/462) or (358/463) or (358/482)).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/22 11:53

## EAST Search History

L18	64	17 and (image adj lag ghost adj image charge adj sweep) and transfer adj (transistor MOS MOSFET FET MIS MISFET) and reset adj (transistor MOS MOSFET FET MIS MISFET) and (row select) and (photo\$1diode photoconversion photo\$1gate photo\$1conduct\$3 photo adj diode photo adj gate photon adj conduct\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:13
L19	6	(rhodes.in. micron.as.) and (image adj lag ghost adj image charge adj sweep) and transfer adj (transistor MOS MOSFET FET MIS MISFET). clm. and reset adj (transistor MOS MOSFET FET MIS MISFET).clm. and (row select).clm. and (photo\$1diode photoconversion photo\$1gate photo\$1conduct\$3 photo adj diode photo adj gate photon adj conduct\$3).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:19
L20	6	"660565".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:20
L21	6	"771290".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:22
L22	7	"925917".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:23
L23	4	"926358".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:23
L24	3	"983971".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:24

## EAST Search History

L25	6	"009006".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:25
L26	6	"043998".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:26
L27	8	"165490".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:27
L28	4	"206125".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:27
L29	3	"242375".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:28
L30	5	"434767".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:28
L31	4	"488845".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 12:29
S1	2	"750843".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/10/01 23:15
S2	2	("6140630").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/01 10:45
S4	8	charge adj sweep and image adj lag	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/02 14:41

## EAST Search History

S5	2	("6064053").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/01 10:45
S6	10	(US-5652622-\$ or US-5528643-\$ or US-5500383-\$ or US-5436476-\$ or US-5369039-\$ or US-5182623-\$ or US-5043817-\$ or US-4875101-\$ or US-6064053-\$.did. or (US-6064053-\$.did.	USPAT; DERWENT	OR	OFF	2005/06/01 11:14
S8	7	S6 and reset and transfer adj gate	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/01 11:16
S9	2	(improved enhanced) near3 band adj width near3 fiber	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/01 16:54
S10	2	band adj width near3 fiber.ti.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/01 17:05
S11	5	band adj width near8 fiber.ti.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/01 17:05
S12	335	(348/311).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/02 14:45
S13	158	(348/314).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/02 14:45
S14	2	S13 and reset and image adj lag	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 13:49

## EAST Search History

S15	592	array near2 pixel near4 cell	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/02 16:13
S16	153	array near2 pixel near4 cell.ti,ab, clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/02 16:16
S17	8	array near2 pixel near4 cell.ti.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/06/02 16:34
S18	3	"750843".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/30 15:29
S19	1	(US-20050145900-\$).did.	US-PGPUB	OR	OFF	2005/07/30 16:24
S20	12	(US-20050145900-\$).did. or (US-4875101-\$ or US-5043817-\$ or US-5122850-\$ or US-5182623-\$ or US-5369039-\$ or US-5436476-\$ or US-5500383-\$ or US-5528643-\$ or US-5652622-\$ or US-6064053-\$).did. or (US-6064053-\$).did.	US-PGPUB; USPAT; DERWENT	OR	OFF	2005/07/30 16:25
S21	12	("6140630") or ("6376868") or ("6310366") or ("6326652") or ("6204524") or ("6333205")).PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/30 16:30
S22	0	mond.t.xa. and rhodes.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/30 16:46
S23	3	source adj follower and reset adj transistor and charge adj accumulation adj region and (photodiode photo adj diode) and ghost adj image	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/30 17:05
S24	160	source adj follower and reset adj transistor and charge adj accumulation adj region and (photodiode photo adj diode)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/30 16:58

## EAST Search History

S25	7	source adj follower and reset adj transistor and (photodiode photo adj diode) and ghost adj image	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/30 17:06
S26	202	source adj follower and reset and (photodiode photo adj diode) and imag\$3 near3 lag\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/30 17:19
S27	5	mondt.xa. and source adj follower	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/30 17:19

## EAST Search History

S28	106	(US-20050145900-\$ or US-20010050382-\$ or US-20010012225-\$ or US-20030138985-\$ or US-20030137025-\$ or US-20030136982-\$ or US-20030089929-\$ or US-20030045020-\$ or US-20030042511-\$ or US-20030042509-\$ or US-20030042500-\$ or US-20030042488-\$ or US-20030138990-\$ or US-20030141526-\$ or US-20030148570-\$ or US-20030169360-\$ or US-20030173572-\$ or US-20030176009-\$ or US-20030180982-\$ or US-20030205741-\$ or US-20030205773-\$ or US-20030210334-\$ or US-20040046104-\$ or US-20040051123-\$ or US-20040053436-\$ or US-20040080646-\$).did. or (US-20040080648-\$ or US-20040104412-\$ or US-20040150736-\$ or US-20040164225-\$ or US-20040174449-\$ or US-20040174450-\$ or US-20040178323-\$ or US-20040195600-\$ or US-20040232456-\$ or US-20040235216-\$ or US-20040251394-\$ or US-20040252211-\$ or US-20040253761-\$ or US-20050001248-\$ or US-20050012124-\$ or US-20050017277-\$ or US-20050032281-\$ or US-20050059177-\$ or US-20050059180-\$ or US-20050077554-\$ or US-20050082582-\$ or US-20050087780-\$ or US-20050093038-\$ or US-20050106773-\$ or US-20050112789-\$ or US-20050121708-\$ or US-20050145906-\$).did. or (US-4875101-\$ or US-5043817-\$ or US-5122850-\$ or US-5182623-\$ or US-5369039-\$ or US-5436476-\$ or US-5500383-\$ or US-5528643-\$ or US-5557677-\$ or US-5064052-\$	US-PGPUB; USPAT; DERWENT	OR	OFF	2005/07/30 17:21
11/22/06 12:33:03 PM	C:\Documents and Settings\jmorphy\My Documents\EAST\Workspaces\10750843.wsp					Page 8



## EAST Search History

S29	1	S28 and accumulat\$3 near2 charge.clm. and storing.clm. and reading.clm. and (remove removing emptying) near4 (remaining remain residual).clm.	US-PGPUB; USPAT; DERWENT	OR	OFF	2005/07/30 17:24
S30	1	S28 and (collect\$3 accumulat\$3) near2 charge.clm. and storing.clm. and reading.clm. and (remove removing emptying) near4 (remaining remain residual).clm.	US-PGPUB; USPAT; DERWENT	OR	OFF	2005/07/30 17:24
S31	1	S28 and (collect\$3 accumulat\$3) near2 charge.clm. and (store storing).clm. and reading.clm. and (remove removing emptying) near4 (remaining remain residual).clm.	US-PGPUB; USPAT; DERWENT	OR	OFF	2005/07/30 17:25
S32	1	S28 and (collect\$3 accumulat\$3) near2 charge.clm. and (store storing storage).clm. and reading.clm. and (remove removing emptying) near4 (remaining remain residual).clm.	US-PGPUB; USPAT; DERWENT	OR	OFF	2005/07/30 17:25
S33	1	S28 and (collect\$3 accumulat\$3) near2 charge.clm. and (store storing storage).clm. and (read reading).clm. and (remove removing emptying) near4 (remaining remain residual).clm.	US-PGPUB; USPAT; DERWENT	OR	ON	2005/07/30 17:25
S34	1	S28 and (collect\$3 accumulat\$3) near2 charge.clm. and (store storing storage).clm. and (read reading).clm. and (remove removing emptying sweep sweeping) near4 (remaining remain residual).clm.	US-PGPUB; USPAT; DERWENT	OR	ON	2005/07/30 17:25
S35	3	S28 and (collect\$3 accumulat\$3) near2 charge.clm. and (store storing storage).clm. and (read reading).clm. and (remove removing emptying sweep sweeping).clm.	US-PGPUB; USPAT; DERWENT	OR	ON	2005/07/30 17:26
S36	174	hynceck.in.	US-PGPUB; USPAT; DERWENT	OR	ON	2005/07/30 17:31
S37	4	(ccd cid imager).ti,ab,clm. and ghost near1 image and (residu remaining residual remnant) near3 (remove sweep removing sweeping)	US-PGPUB; USPAT; DERWENT	OR	ON	2005/07/30 17:34

## EAST Search History

S38	78	(ccd cid imager imaging).ti,ab,clm. and (lag lagging ghost) near2 image and (residu remaining residual remnant) near3 (remove sweep removing sweeping)	US-PGPUB; USPAT; DERWENT	OR	ON	2005/07/30 17:36
S39	14	(ccd cid imager imaging).ti,ab,clm. and (lag lagging ghost) near2 image and (residu remaining residual remnant) near3 (remove sweep removing sweeping) and semiconductor and photodiode	US-PGPUB; USPAT; DERWENT	OR	ON	2005/07/30 17:36
S40	6	"244723".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 13:23
S41	469	((348/311) or (348/314)).CCLS.	US-PGPUB; USPAT	OR	OFF	2005/07/31 13:49
S42	12	reset adj transistor and photoconversion and floating adj diffusion and imager and (ghost adj image image adj lag)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/31 13:55
S43	0	accumulat\$3 near2 charge near20 stor\$3 near20 read\$3 near20 remov\$3 near20 (remaining residual residu)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/31 15:08
S44	0	accumulat\$3 near20 charge near20 stor\$3 near20 read\$3 near20 remov\$3 near20 (remaining residual residu)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/31 15:08
S45	7	charge near20 stor\$3 near20 read\$3 near20 remov\$3 near20 (remaining residual residu)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/31 15:28
S46	2	("6064053").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 15:40
S47	0	S46 and reset adj transistor	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 15:40

## EAST Search History

S48	84	reset near4 transistor and (remain\$3 residual residu) near3 charge and imager	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/31 15:42
S49	77	reset near3 transistor and (remain\$3 residual residu) near3 charge and imager	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/07/31 16:14
S50	2	("6140630").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 16:21
S51	2	("6376868").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 16:21

## EAST Search History

S52	109	(US-20010012225-\$ or US-20010050382-\$ or US-20030042488-\$ or US-20030042500-\$ or US-20030042509-\$ or US-20030042511-\$ or US-20030045020-\$ or US-20030052349-\$ or US-20030089929-\$ or US-20030136982-\$ or US-20030137025-\$ or US-20030138985-\$ or US-20030138990-\$ or US-20030141526-\$ or US-20030148570-\$ or US-20030169360-\$ or US-20030173572-\$ or US-20030176009-\$ or US-20030180982-\$ or US-20030205741-\$ or US-20030205773-\$ or US-20030210334-\$ or US-20040046104-\$ or US-20040051123-\$ or US-20040053436-\$ or US-20040080646-\$).did. or (US-20040080648-\$ or US-20040104412-\$ or US-20040150736-\$ or US-20040164225-\$ or US-20040174449-\$ or US-20040174450-\$ or US-20040178323-\$ or US-20040195600-\$ or US-20040232456-\$ or US-20040235216-\$ or US-20040251394-\$ or US-20040252211-\$ or US-20040253761-\$ or US-20050001248-\$ or US-20050012124-\$ or US-20050017277-\$ or US-20050032281-\$ or US-20050059177-\$ or US-20050059180-\$ or US-20050077554-\$ or US-20050082582-\$ or US-20050087780-\$ or US-20050093038-\$ or US-20050106773-\$ or US-20050112789-\$ or US-20050121708-\$ or US-20050145900-\$).did. or (US-20050145906-\$ or US-20050083421-\$ or US-20020190287-\$).did. or (US-4875101-\$ or US-5043817-\$ US-5122850-\$ or US-5107672-\$	US-PGPUB; USPAT; DERWENT	OR	OFF	2005/07/31 16:27
11/22/06 12:33:03 PM C:\Documents and Settings\jmonahan\My Documents\EAST\Workspaces\10750843.wsp						
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## EAST Search History

S53	0	("10andmethodadj2(operatingusing)").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 16:28
S54	9	S52 and method adj2 (operating using)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 16:28
S55	2	("6326230").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 17:52
S56	2	S55 and (anti-blooming anti adj blooming)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 17:52

## EAST Search History

S57	109	(US-20010012225-\$ or US-20010050382-\$ or US-20030042488-\$ or US-20030042500-\$ or US-20030042509-\$ or US-20030042511-\$ or US-20030045020-\$ or US-20030052349-\$ or US-20030089929-\$ or US-20030136982-\$ or US-20030137025-\$ or US-20030138985-\$ or US-20030138990-\$ or US-20030141526-\$ or US-20030148570-\$ or US-20030169360-\$ or US-20030173572-\$ or US-20030176009-\$ or US-20030180982-\$ or US-20030205741-\$ or US-20030205773-\$ or US-20030210334-\$ or US-20040046104-\$ or US-20040051123-\$ or US-20040053436-\$ or US-20040080646-\$).did. or (US-20040080648-\$ or US-20040104412-\$ or US-20040150736-\$ or US-20040164225-\$ or US-20040174449-\$ or US-20040174450-\$ or US-20040178323-\$ or US-20040195600-\$ or US-20040232456-\$ or US-20040235216-\$ or US-20040251394-\$ or US-20040252211-\$ or US-20040253761-\$ or US-20050001248-\$ or US-20050012124-\$ or US-20050017277-\$ or US-20050032281-\$ or US-20050059177-\$ or US-20050059180-\$ or US-20050077554-\$ or US-20050082582-\$ or US-20050087780-\$ or US-20050093038-\$ or US-20050106773-\$ or US-20050112789-\$ or US-20050121708-\$ or US-20050145900-\$).did. or (US-20050145906-\$ or US-20050083421-\$ or US-20020190287-\$).did. or (US-4875101-\$ or US-5043817-\$ US-5122850-\$ or US-5122850-\$	US-PGPUB; USPAT; DERWENT	OR	OFF	2005/07/31 18:25
11/22/06 12:33:03 PM	C:\Documents and Settings\jmonahan\My Documents\EAST\Workspaces\10750843.wsp					Page 14

## EAST Search History

S58	78	S57 and rhodes.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 18:26
S59	1004	photogate	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 19:08
S60	28	photogate.ti.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/07/31 19:08
S61	2	reset near6 (removing remove removal) near6 (residual remaining remain) near6 charge and (ghost adj image (image near1 (lag lagging))) and photodiode	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/06 14:29
S62	0	reset near6 (removing remove removal) near6 (residual remaining remain) near6 charge and (ghost adj image (image near1 (lag lagging))) and photodiode and reset adj transistor	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/06 14:31
S63	2	reset near6 (removing remove removal) near6 (residual remaining remain) near6 charge and (photo adj diode photodiode) and reset adj transistor	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/06 14:31
S64	0	reset adj transistor near8 (removing remove removal) near8 (residual remaining remain) near8 charge near8 transfer adj transistor and (photo adj diode photodiode) and reset adj transistor and transfer adj transistor	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/06 14:33
S65	0	reset adj transistor near12 (removing remove removal) near12 (residual remaining remain) near12 charge near12 transfer adj transistor and (photo adj diode photodiode) and reset adj transistor and transfer adj transistor	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/06 14:33

## EAST Search History

S66	1	reset adj transistor with (removing remove removal) near12 (residual remaining remain) near12 charge with transfer adj transistor and (photo adj diode photodiode) and reset adj transistor and transfer adj transistor	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/06 14:47
S67	70	transfer adj thyristor	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/06 14:48
S68	2	transfer adj thyristor near4 switch	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/06 15:06
S69	27	method near2 operating near4 (pixel adj cell).ti,ab,clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/06 15:30
S70	2	"6326230".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/06 16:28
S71	3	snap adj shot and reset adj transistor and (image adj lag ghost adj image)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/06 16:29
S72	3351	((348/311) or (348/314) or (257/290) or (257/291) or (257/428) or (257/431) or (257/445)).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/01/07 15:22
S73	67	S72 and (ghost adj image image adj lag\$4) and reset and transfer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/07 15:48
S74	66	S72 and (ghost adj image image adj lag\$4) and reset and transfer and transistor	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/07 15:56



## EAST Search History

S75	94	S72 and reset.ti,ab,clm. and transfer.ti,ab,clm. and transistor.ti,ab,clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/07 15:58
S76	39	S72 and reset.ti,ab,clm. and ((read\$3 transfer) near2 transistor).ti,ab,clm. and reset near1 transistor.ti,ab,clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/07 15:59
S77	33	S72 and reset.ti,ab,clm. and ((read\$3 transfer) near2 transistor).ti,ab,clm. and reset near1 transistor.ti,ab,clm. and @ad<"20040106"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/07 16:06
S78	32	S72 and reset.ti,ab,clm. and ((read\$3 transfer) near2 transistor).ti,ab,clm. and reset near1 transistor.ti,ab,clm. and @ad<"20040106" and reset and transfer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/07 16:06
S79	14	"6326230"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/12 11:16
S80	2	("6326230").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/12 11:16
S81	4	("6046466").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/12 12:19
S82	12	reset near4 "before" near4 integration adj period and photodiode	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/12 12:29
S83	1	reset near8 "before" near8 integration adj period near8 transfer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/12 12:29

## EAST Search History

S84	1	reset near8 "before" near8 integration adj period near8 transfer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/12 12:54
S85	1	agan.in. and photoconversion	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/12 14:35
S86	5	"662445".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/12 15:12
S87	3505	((257/290) or (257/291) or (257/428) or (257/431) or (257/445) or (348/311) or (348/314)).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/12 15:13
S88	683	S87 and (image imager imaging). ti,ab,clm. and (photoconversion photodiode photogate (photo adj gate) (photo adj diode))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/12 15:15
S89	7	S87 and (image imager imaging). ti,ab,clm. and (photoconversion photodiode photogate (photo adj gate) (photo adj diode)) and (reset resetting) near10 (transfer transferring) and (blur\$4 ghost)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/12 15:21
S90	2	S87 and (image imager imaging). ti,ab,clm. and (photoconversion photodiode photogate (photo adj gate) (photo adj diode)) and (reset resetting) near10 (transfer transferring).ti,ab,clm. and (blur\$4 ghost)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/12 15:21
S91	2	"20050057680"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/01 23:17
S92	3	"750843".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/18 17:24

## EAST Search History

S93	2	"20050057680".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/19 06:51
S94	417	(method process) near4 (operati\$2 using imag\$3) same pixel same reset\$4 and (accumulat\$3 stor\$3) and (pd photoconversion photodiode) and read\$3 and transistor	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/18 17:34
S95	56	(method process) near4 (operati\$2 using imag\$3) same pixel same reset\$4 and (accumulat\$3 stor\$3) and (pd photoconversion photodiode) and read\$3 and transistor and (micron. as. rhodes.in.)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/18 17:36
S96	18	(method process) near20 (operati\$2 using imag\$3) near20 pixel near20 reset\$4 and (accumulat\$3 stor\$3) and (pd photoconversion photodiode) and read\$3 and transistor and (micron. as. rhodes.in.)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/18 17:38
S97	22	(method process) near30 (operati\$2 using imag\$3) near30 pixel near30 reset\$4 and (accumulat\$3 stor\$3) and (pd photoconversion photodiode) and read\$3 and transistor and (micron. as. rhodes.in.)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/18 17:38
S98	22	(method process) near40 (operati\$2 using imag\$3) near40 pixel near40 reset\$4 and (accumulat\$3 stor\$3) and (pd photoconversion photodiode) and read\$3 and transistor and (micron. as. rhodes.in.)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/18 17:40
S99	2	(method process) near40 (operati\$2 using imag\$3) near40 pixel near40 reset\$4 near40 (accumulat\$3 stor\$3) and (pd photoconversion photodiode) and read\$3 and transistor and (micron. as. rhodes.in.)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/18 17:44

## EAST Search History

S10 0	0	(method process) near40 (operati\$2 using imag\$3) near40 pixel near40 reset\$4 near40 (accumulat\$3 stor\$3) near40 (pd photoconversion photodiode) and read\$3 and transistor and (micron. as. rhodes.in.)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/18 17:42
S10 1	0	((method process) near40 (operati\$2 using imag\$3) near40 pixel near40 reset\$4 near40 (accumulat\$3 stor\$3) and (pd photoconversion photodiode) near40 read\$3).clm. and transistor and (micron.as. rhodes.in.)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/18 17:44
S10 2	244	((rhodes near2 howard).in. micron.as.) and (method use using operating) near4 (pixel imager imagining).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 05:20
S10 3	250	((rhodes near2 howard).in. micron.as.) and (method use using operati\$2) near4 (pixel imager imagining).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 05:21
S10 4	112	((rhodes near2 howard).in. micron.as.) and (method use using operati\$2) near4 (pixel imager imagining).clm. and (reset resetting).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 05:21
S10 5	1	((rhodes near2 howard).in. micron.as.) and (method use using operati\$2) near4 (pixel imager imagining).clm. and (reset resetting).clm. and (reamining residual left-over leftover remaining) adj charge.clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 05:23
S10 6	1	((rhodes near2 howard).in. micron.as.) and (method use using operati\$2) near4 (pixel imager imagining).clm. and (reset resetting).clm. and (remaining residual left-over leftover remaining) adj charge.clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 05:23
S10 7	1	((rhodes near2 howard).in. micron.as.) and (method use using operati\$2) near4 (pixel imager imagining).clm. and (reset resetting).clm. and (remainder residual left-over leftover remaining) adj charge.clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 05:24

## EAST Search History

S10 8	1	((rhodes near2 howard).in. micron.as.) and (method use using operati\$2) near4 (pixel imager imagining).clm. and (reset resetting).clm. and ((charge near1 sweep)(remainder residual left-over leftover remaining) adj charge).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 05:24
S10 9	1	((rhodes near2 howard).in. micron.as.) and (method use using operati\$2) near4 (pixel imager imagining).clm. and (reset resetting).clm. and ((charge near1 sweep\$3)(remainder residual left-over leftover remaining) adj charge).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 05:39
S11 0	250	((rhodes near2 howard).in. micron.as.) and (method use using operati\$2) near4 (pixel imager imagining).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 05:39
S11 1	285	((rhodes near2 howard).in. micron.as.) and (method use using operati\$2) near4 (pixel imager imagining).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 05:47
S11 2	1	((rhodes near2 howard).in. micron.as.) and (method use using operati\$2) near4 (pixel imager imaging).clm. and (reset resetting).clm. and ((charge near1 sweep\$3)(remainder residual left-over leftover remaining) adj charge).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 05:39
S11 3	12	("6140630") or ("6376868") or ("6310366") or ("6326652") or ("6204524") or ("6333205")).PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/19 05:50
S11 4	365	integration adj period and reset adj transistor and (imager imaging)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/19 06:51
S11 5	13	integration adj period near4 defined and reset adj transistor and (imager imaging)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/19 08:51

## EAST Search History

S11 6	0	integration adj period near4 (row adj transistor)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/19 07:07
S11 7	1	integration adj period with (row adj transistor)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/19 07:11
S11 8	2	"20050145900".pn. and integration adj period	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 07:21
S11 9	0	"20050576800".pn. and integration adj period	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 07:21
S12 0	2	"20050057680".pn. and integration adj period	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 07:21
S12 1	2	("6326230").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/19 08:51
S12 2	1	(US-20050145900-\$).did.	US-PGPUB	OR	OFF	2006/11/19 10:57
S12 3	1	(US-20050145900-\$).did. and integration adj period and integration	US-PGPUB	OR	ON	2006/11/19 10:58
S12 4	1	(US-20050145900-\$).did. and integration adj period and integration and photoconversion	US-PGPUB	OR	ON	2006/11/19 11:18
S12 5	1	(US-20050145900-\$).did. and integration adj period and integration and photoconversion and (shutter)	US-PGPUB	OR	ON	2006/11/19 11:23
S12 6	1	rst and "6326230".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/19 12:32

## EAST Search History

S12 7	2	"20050110885".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 17:19
S12 8	2	"20050157194".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 17:22
S12 9	1870	(integration accumulation sampling) near1 (time period interval) and (imaging imager) and reset and transfer and (row select) and diagram	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/19 17:25
S13 0	127	(integration accumulation sampling) near1 (time period interval) and (imaging imager) and reset and transfer and (row select) and diagram and (image adj lag ghost)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/20 08:50
S13 1	56	rhodes.in. and micron.as. and image adj lag and reset and transfer and row	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/20 08:51
S13 2	55	rhodes.in. and micron.as. and image adj lag and reset and transfer and row	USPAT	OR	ON	2006/11/20 08:51
S13 3	55	rhodes.in. and micron.as. and image adj lag and reset and transfer and row	USPAT	OR	ON	2006/11/20 08:51
S13 4	57	rhodes.in. and micron.as. and (charge adj sweep image adj lag anti-blooming)	USPAT	OR	ON	2006/11/20 16:53
S13 5	7193	((257/214) or (257/222) or (257/223) or (257/225) or (257/290) or (257/291) or (257/428) or (257/431) or (257/445) or (257/e27.131) or (257/e27.132) or (257/e27.133) or (257/e27.134) or (348/311) or (348/314)).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/20 14:31
S13 6	219	S135 and (charge adj sweep (anti\$1blooming anti adj blooming) image adj lag) and transfer adj gate and reset and (row select)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/20 14:52

## EAST Search History

S13 7	4	"623533".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/20 15:13
S13 8	5	malsawma.xa. and rhodes.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/20 15:14
S13 9	289	second near5 transfer and (image adj lag anti-blooming antiblooming anti adj blooming)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/20 16:54
S14 0	12	(US-6333205-\$ or US-6204524-\$ or US-6376868-\$ or US-6140630-\$ or US-6310366-\$ or US-6326652-\$).did. or (US-6333205-\$ or US-6204524-\$ or US-6376868-\$ or US-6140630-\$ or US-6310366-\$ or US-6326652-\$).did.	USPAT; DERWENT	OR	OFF	2006/11/20 16:58
S14 1	5	S140 and shutter	USPAT; DERWENT	OR	ON	2006/11/20 16:58
S14 2	1	(US-20050145900-\$).did.	US-PGPUB	OR	OFF	2006/11/20 17:42
S14 3	1	(US-20050145900-\$).did. and shut\$3	US-PGPUB	OR	OFF	2006/11/20 17:42
S14 4	1	(US-20050145900-\$).did.	US-PGPUB	OR	OFF	2006/11/20 17:56
S14 5	1	(US-20050145900-\$).did. and pixel	US-PGPUB	OR	ON	2006/11/20 17:57
S14 6	977	(257/292).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/21 09:28
S14 7	977	(257/292).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/21 15:58



## EAST Search History

S15 2	2	("20020051229").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/11/21 16:13
S15 3	1	(US-20050145900-\$).did.	US-PGPUB	OR	OFF	2006/11/21 21:23
S15 4	1	(US-20050145900-\$).did. and (photogate photo adj gate)	US-PGPUB	OR	OFF	2006/11/21 19:57

## EAST Search History

S15 5	198	(US-20010002848-\$ or US-20050030402-\$ or US-20050145900-\$ or US-20040262651-\$ or US-20050121708-\$ or US-20050112789-\$ or US-20050077554-\$ or US-20050017277-\$ or US-20050012124-\$ or US-20040253761-\$ or US-20040235216-\$ or US-20040232456-\$ or US-20050083421-\$ or US-20050093038-\$ or US-20050157194-\$ or US-20050077586-\$ or US-20040195600-\$ or US-20040178323-\$ or US-20040104412-\$ or US-20040080648-\$ or US-20050057680-\$ or US-20050012168-\$ or US-20050001248-\$ or US-20040053436-\$ or US-20040046104-\$ or US-20030205741-\$).did. or (US-20030176009-\$ or US-20040252211-\$ or US-20030148570-\$ or US-20030138990-\$ or US-20030137025-\$ or US-20030136982-\$ or US-20030089929-\$ or US-20030045020-\$ or US-20040150736-\$ or US-20040051123-\$ or US-20030042509-\$ or US-20030042500-\$ or US-20030042488-\$ or US-20020109157-\$ or US-20020089004-\$ or US-20030205773-\$ or US-20030173572-\$ or US-20030180982-\$ or US-20050001277-\$ or US-20030169360-\$ or US-20030138985-\$ or US-20030141526-\$ or US-20020011614-\$ or US-20010012225-\$ or US-20030042511-\$ or US-20020109164-\$ or US-20010050382-\$).did. or (US-20010022371-\$ or US-20050106773-\$ or US-20050082582-\$ or US-20050032281-\$ or US-20040174440-\$ or	US-PGPUB; USPAT; DERWENT	OR	OFF	2006/11/21 20:00
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## EAST Search History

S15 6	141	S155 and (photo\$1gate photo adj gate)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/21 20:09
S15 7	60	(photo\$1gate photo adj gate).ti.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/21 20:12
S15 8	60	(photo\$1gate photo adj gate).ti. and (photo\$1gate photo adj gate)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/21 20:13
S15 9	1	(US-20050145900-\$).did. and (read-out read\$1out sample near2 hold)	US-PGPUB	OR	ON	2006/11/21 21:26
S16 0	12	(US-6140630-\$ or US-6333205-\$ or US-6326652-\$ or US-6310366-\$ or US-6376868-\$ or US-6204524-\$).did. or (US-6140630-\$ or US-6376868-\$ or US-6326652-\$ or US-6204524-\$ or US-6333205-\$ or US-6310366-\$).did.	USPAT; DERWENT	OR	OFF	2006/11/21 22:20
S16 1	12	S160 and cmos	USPAT; DERWENT	OR	OFF	2006/11/21 22:46
S16 2	14	"6326230"	USPAT; DERWENT	OR	OFF	2006/11/21 22:48
S16 3	8	"6326230" and photo\$1gate	USPAT; DERWENT	OR	ON	2006/11/21 22:53
S16 4	52	(photo\$1gate photo adj gate).ti. and (photo\$1gate photo adj gate)	USPAT; DERWENT	OR	ON	2006/11/21 23:27
S16 5	305	(photo\$1gate photo adj gate).ti, ab,clm. and (photo\$1gate photo adj gate)	USPAT; DERWENT	OR	ON	2006/11/21 23:27
S16 6	39	(photo\$1gate photo adj gate).ti, ab,clm. and (photo\$1gate photo adj gate) near4 (improvement improv\$3 advantage advantageously possibility increas\$3 decreas\$3)	USPAT; DERWENT	OR	ON	2006/11/21 23:39

## EAST Search History

S16 7	109	photodiode near4 (photo adj gate photo\$1gate) near4 (photo adj conductor photo\$1conductor) and cmos near4 imag\$3	USPAT; DERWENT.	OR	ON	2006/11/21 23:41
S16 8	66	photodiode near4 (photo adj gate photo\$1gate) near4 (photo adj conductor photo\$1conductor) and cmos near4 imag\$3 and (charge adj sweep image adj lag anti adj blooming anti\$1blooming ghost adj image)	USPAT; DERWENT	OR	ON	2006/11/21 23:42
S16 9	0	(photo\$gate photo adj gate) near4 deplet\$3 and cmos and (ghost adj image charge adj sweep)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 08:42
S17 0	0	(photo\$gate photo adj gate) near6 deplet\$3 and cmos and (ghost adj image charge adj sweep)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 08:43
S17 1	0	(photo\$1gate photo adj gate) near6 deplet\$3 and cmos and (ghost adj image charge adj sweep)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 08:43
S17 2	205	(photo\$1gate photo adj gate) near6 deplet\$3 and cmos	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 08:43
S17 3	198	(photo\$1gate photo adj gate) near6 deplet\$3 and cmos and transfer and reset	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 08:43
S17 4	182	(photo\$1gate photo adj gate) near3 deplet\$3 and cmos and transfer and reset	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 08:44
S17 5	46	((photo\$1gate photo adj gate) near3 deplet\$3 and cmos and transfer and reset) not rhodes.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/11/22 08:45

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Last Name = RHODES

First Name = HOWARD

Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>08066835</u>	5405788	150	05/24/1993	METHOD FOR FORMING AND TAILORING THE ELECTRICAL CHARACTERISTICS OF SEMICONDUCTOR DEVICES <i>h h</i>	RHODES, HOWARD
<u>08416994</u>	Not Issued	166	04/05/1995	METHOD FOR FORMING AND TAILORING THE ELECTRICAL CHARACTERISTICS OF SEMICONDUCTOR DEVICES <i>h h</i>	RHODES, HOWARD
<u>08578825</u>	Not Issued	161	12/26/1995	METHOD TO AVOID THRESHOLD VOLTAGE SHIFT IN THICKER DIELECTRIC FILMS <i>h h</i>	RHODES, HOWARD
<u>08627262</u>	5750012	150	04/04/1996	MULTIPLE SPECIES SPUTTERING FOR IMPROVED BOTTOM COVERAGE AND IMPROVED SPUTTER RATE	RHODES, HOWARD
<u>08763848</u>	5661045	150	12/09/1996	METHOD FOR FORMING AND TAILORING THE ELECTRICAL CHARACTERISTICS OF SEMICONDUCTOR DEVICES	RHODES, HOWARD
<u>09053354</u>	6083358	150	04/01/1998	MULTIPLE SPECIES SPUTTERING FOR IMPROVED BOTTOM COVERAGE AND IMPROVED SPUTTER RATE	RHODES, HOWARD
<u>09312373</u>	6462394	150	05/13/1999	DEVICE CONFIGURED TO AVOID THRESHOLD VOLTAGE SHIFT IN A DIELECTRIC FILM	RHODES, HOWARD
<u>09609441</u>	6398923	150	07/03/2000	MULTIPLE SPECIES SPUTTERING METHOD	RHODES, HOWARD
<u>09654093</u>	7067442	150	08/31/2000	METHOD TO AVOID THRESHOLD VOLTAGE SHIFT IN THICKER DIELECTRIC FILMS	RHODES, HOWARD
<u>09721839</u>	6458714	150	11/22/2000	METHOD OF SELECTIVE OXIDATION IN SEMICONDUCTOR	RHODES, HOWARD

				MANUFACTURE	
<u>09789335</u>	<u>6518610</u>	150	02/20/2001	RHODIUM-RICH OXYGEN BARRIERS	RHODES, HOWARD
<u>09945252</u>	<u>6630706</u>	150	08/30/2001	LOCALIZED ARRAY THRESHOLD VOLTAGE IMPLANT TO ENHANCE CHARGE STORAGE WITHIN DRAM MEMORY CELLS	RHODES, HOWARD
<u>10209386</u>	<u>6740554</u>	150	07/30/2002	METHODS TO FORM RHODIUM-RICH OXYGEN BARRIERS	RHODES, HOWARD
<u>10234576</u>	<u>6800520</u>	150	08/30/2002	LOCALIZED ARRAY THRESHOLD VOLTAGE IMPLANT ENHANCE CHARGE STORAGE WITHIN DRAM MEMORY CELLS	RHODES, HOWARD
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<u>10291772</u>	<u>6888214</u>	150	11/12/2002	ISOLATION TECHNIQUES FOR REDUCING DARK CURRENT IN CMOS IMAGE SENSORS	RHODES, HOWARD
<u>10293494</u>	<u>7091536</u>	150	11/14/2002	ISOLATION PROCESS AND STRUCTURE FOR CMOS IMAGERS	RHODES, HOWARD
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<u>10385844</u>	<u>6949445</u>	150	03/12/2003	METHOD OF FORMING ANGLED IMPLANT FOR TRENCH ISOLATION	RHODES, HOWARD
<u>10422965</u>	Not Issued	61	04/25/2003	Imager floating diffusion region and process for forming same	RHODES, HOWARD
<u>10437494</u>	<u>6815287</u>	150	05/14/2003	LOCALIZED ARRAY THRESHOLD VOLTAGE IMPLANT TO ENHANCE CHARGE STORAGE WITHIN DRAM MEMORY CELLS	RHODES, HOWARD
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<u>10655219</u>	<u>6969631</u>	150	09/05/2003	METHOD OF FORMING PHOTODIODE WITH SELF-ALIGNED IMPLANTS FOR HIGH QUANTUM EFFICIENCY	RHODES, HOWARD

<u>10660565</u> <i>g</i>	Not Issued	61	09/12/2003	CMOS imager pixel designs	RHODES, HOWARD
<u>10771290</u> <i>g</i>	Not Issued	71	02/05/2004	GATED ISOLATION STUCTURE FOR IMAGERS	RHODES, HOWARD
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<u>10926358</u> <i>g</i>	Not Issued	41	08/26/2004	Isolation techniques for reducing dark current in CMOS image sensors	RHODES, HOWARD
<u>10983971</u>	Not Issued	160	11/08/2004	Localized array threshold voltage implant to enhance charge storage within DRAM memory cells <i>ML</i>	RHODES, HOWARD
<u>11009006</u> <i>g</i>	Not Issued	41	12/13/2004	Deep photodiode isolation process	RHODES, HOWARD
<u>11043998</u> <i>g</i>	Not Issued	30	01/28/2005	Imager floating diffusion region and process for forming same	RHODES, HOWARD
<u>11066325</u>	Not Issued	160	02/25/2005	Isolation techniques for reducing dark current in CMOS image sensors	RHODES, HOWARD
<u>11165490</u> <i>g</i>	7102180	150	06/24/2005	CMOS IMAGER PIXEL DESIGNS	RHODES, HOWARD
<u>11206125</u> <i>g</i>	Not Issued	93	08/18/2005	PHOTODIODE WITH SELF-ALIGNED IMPLANTS FOR HIGH QUANTUM EFFICIENCY AND METHOD OF FORMATION	RHODES, HOWARD
<u>11242375</u> <i>g</i>	Not Issued	30	10/03/2005	Method to avoid threshold voltage shift in thicker dielectric films	RHODES, HOWARD
<u>11434767</u> <i>g</i>	Not Issued	20	05/17/2006	Image sensor having a charge storage region provided within an implant region	RHODES, HOWARD
<u>11488845</u> <i>g</i>	Not Issued	20	07/19/2006	CMOS imager pixel designs <i>no: photoreactor + method of form.</i>	RHODES, HOWARD
<u>11529631</u> <i>g</i>	Not Issued	25	09/29/2006	Method of operating image sensor <i>but no DP.</i>	RHODES, HOWARD
<u>60478348</u>	Not Issued	159	06/16/2003	Photodiode with self-aligned implants for high quantum efficiency and method of formation <i>q6.</i>	RHODES, HOWARD
<u>06130075</u>	4307922	150	03/13/1980	MOVABLE STORAGE SYSTEM	RHODES, HOWARD A.
<u>09207593</u>	6639261	150	12/08/1998	METHOD FOR FORMING A LOW LEAKAGE CONTACT IN A CMOS IMAGER	RHODES, HOWARD E
<u>09310489</u>	6159790	150	05/12/1999	METHOD OF CONTROLLING OUTDIFFUSION IN A DOPED	RHODES, HOWARD E



				THREE-DIMENSIONAL FILM BY USING ANGLED IMPLANTS	
<a href="#">09310515</a>	<a href="#">6211545</a>	150	05/12/1999	A DEVICE FABRICATED BY A METHOD OF CONTROLLING OUTDIFFUSION FROM A DOPED THREE-DIMENSIONAL FILM	RHODES, HOWARD E.
<a href="#">09513470</a>	<a href="#">6407440</a>	150	02/25/2000	PIXEL CELL WITH HIGH STORAGE CAPACITANCE FOR A CMOS IMAGER	RHODES, HOWARD E.
<a href="#">09516819</a>	<a href="#">6285038</a>	150	03/01/2000	Integrated circuitry and dram integrated circuitry	RHODES, HOWARD E.
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<a href="#">09546492</a>	<a href="#">6492241</a>	150	04/10/2000	INTEGRATED CAPACITORS FABRICATED WITH CONDUCTIVE METAL OXIDES	RHODES, HOWARD E.
<a href="#">09616540</a>	<a href="#">6440825</a>	150	07/14/2000	METHOD OF CONTROLLING OUTDIFFUSION IN A DOPED THREE-DIMENSIONAL FILM	RHODES, HOWARD E.

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☐ 1. Random noise generation mechanism for a CCD imager with an incomplete transfer storage diode

Nakamura, N.; Shioyama, Y.; Ohsawa, S.; Sugiki, T.; Matsunaga, Y.;

[Electron Devices, IEEE Transactions on](#)

Volume 43, Issue 11, Nov. 1996 Page(s):1883 - 1889

Digital Object Identifier 10.1109/16.543023

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☐ 2. HDTV image sensor: the pixel structure

Theuwissen, A.; Peek, H.; Centen, P.; van de Steeg, M.; Boesten, R.; Hartog, P.; Kokshoorn, de Koning, E.; Oppers, J.; Vledder, F.;

[Broadcasting Convention, 1992. IBC. International](#)

3-7 Jul 1992 Page(s):488 - 491

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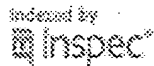
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## 1. An enhanced-performance CMOS imager with a flushed-reset photodiode pixel

Pain, B.; Guang Yang; Cunningham, T.J.; Wrigley, C.; Hancock, B.;  
Electron Devices, IEEE Transactions on  
Volume 50, Issue 1, Jan. 2003 Page(s):48 - 56

**Abstract:**

A new front-end for photodiode-based CMOS imagers is presented. Degradation in imaging performance due to conventional hard- and soft-reset of pixels is analyzed. To overcome these limitations, the design and operation of a flushed-reset pixel is described. The flushed-reset pixel combines the best of hard- and soft-reset to simultaneously provide excellent radiometric accuracy, linearity, no image lag, high saturation level, and reduced read-noise. The new front-end is implemented by changes to the column-circuitry only, leaving the pixel unchanged, preventing degradation of unrelated imaging performance. It is compatible with large format imager implementation, has minimal impact on the frame-rate, and does not introduce any additional hot-carrier stress in the pixel. Data from a large format (512/sup 2/) imager demonstrates the efficacy of the flushed-reset pixel approach.

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